LINCOLNSHIRE

NATURALISTS' UNION.

TRANSACTIONS, 1939-1942.

VOLUME TEN.

EDITED BY F. T. BAKER, F.R.E.S. & A. ROEBUCK, N.D.A., F.R.E.S.

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Edited by
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AND
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N.D.A., F.R.E.S.

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Lincolnshire Naturalists' Union.

Founded June 12th, 1893.

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STATEMENT OF ACCOUNT from January 1st to December 31st, 1941.

GENERAL FUND.

RECEIPTS.	£	s.	d.
Balance in Bank, 1st January, 1941	20	8	10
Members' Subscriptions	37	15	0
	£58	3	10

PAYMENTS.	£	s.	d.
Printers' Account for Notices of Meetings, Stationery, etc.	2	14	1
Postages and small payments	9	1	10
Grant to Publication Fund	29	2	10
Balance in Bank, 31st December, 1941	17	5	1
	£58	3	10

PUBLICATION FUND.

	£	s.	d.
Donation to Publication Fund	5	7	9
Sale of Transactions	0	15	0
Grant from General Fund	29	2	10
	£35	5	7

	£	s.	d.
Printer's Account for "Transactions" ...	30	0	0
Block and Prints for Diagram	3	10	0
Reprints of Dr. Kent's paper	1	15	7
	£35	5	7

SEPARATE ACCOUNT.

Life Members' Subscriptions invested in P. O. Savings Bank.

	£	s.	d.
Amount Shown on Balance Sheet, 1940 ...	106	17	9
Interest for 1940	2	13	6
	£109	11	3

	£	s.	d.
Income Tax, 1941—2	1	5	0
Balance on 31st December, 1941	108	6	3
	£109	11	3

Lincolnshire Naturalists' Union.

Presidential Address

Delivered at Lincoln, November 15th, 1941.

BY

R. Wood Powell, L.D.S.

REPTILES AND AMPHIBIA.

As you and war conditions have combined to keep me in the Presidential Chair for a second year, I felt it might be wise to try a new subject, at least, one which has not yet formed the theme of a Presidential Address. After considerable thought, I have decided to talk to you to-day about Reptiles and Amphibia—the snakes and lizards, toads and frogs that some of you hold in horror, yet which possess a beauty and an interest of their own when once we can master the initial feeling of repugnance that most of us have. How can anyone deny that the method of progression of the snake is other than graceful and a little knowledge of how it is achieved renders it really wonderful. The snakes possess no breast-bone and so the ends of the ribs are free and as it makes its serpentine body movement so do the free ends of each pair of ribs cause the corresponding under scale to catch in any inequality of the surface. This acts as a stop and so drives the creature forward, but of course it is helpless on a completely smooth surface. The same freedom of the ribs allows it to engorge other things of a greater girth than itself. The graceful shape and delicate colouring, with the bewildering rapidity of movement shown by our lizards can also only be regarded as beautiful, whilst even the toad, that most maligned of all living creatures, has the most beautiful eyes, visible also from the

underside through the open mouth and equally beautiful when seen from that angle, and also the daintiest of fingers and toes. It is a revelation to see an old toad 'peeling off her gloves' as the final effort in shedding her old skin before appearing in new and brighter garb.

As very little, if any, work has been done on Reptiles and Batrachians from the County point of view, I propose to give you a short description of all the British species, with slides to illustrate the more salient points and I should like to say that I owe my descriptions of them to Mr. Boulenger's fascinating book "*Reptiles and Batrachians*". Then, with your help, I think that we shall soon be able to make out a complete county record of all of them.

SNAKES.

Common Grass Snake—*Tropidonotus natrix.*

Grey olive-brown above with black spots or narrow cross bands and a white, yellow or sometimes orange collar on the nape, bordered behind by two black crescentic patches, while the under parts are black and white or grey chequered. When irritated it hisses loudly and emits a powerful smell but does not bite. Its food consists of frogs, toads and small fishes. The young eat earthworms and tadpoles. It prefers the neighbourhood of water but will live far from it.

It pairs in April and May and lays eggs, 10—45 in number, in a string and stuck together in a bunch. They hatch two months later. They are often laid in manure heaps or decaying leaves or in old hay-stacks. The young at birth measure 8 inches in length and have very sharply defined markings. The egg-tooth is present but is shed on the second day. The grass snake hibernates in holes, in walls, manure heaps, etc., and does not emerge until April. Not often found in the British Isles more than four feet long, but sometimes grows up to six feet in S. Europe. It is common locally throughout the county.

Smooth Snake—*Coronella austriaca.*

Confined mainly to the south of England, and we have no

record so far north, but on the Continent it ranges as far north as Scandinavia. It would be a good record for the county if it were ever found. It was for long believed to be peculiar to the British Isles. It has a superficial resemblance to the viper. According to Buckland it was more common in the south in his day than was generally realised. It can be distinguished easily from the viper by the round pupil of the eye which is slit-like in the latter. It is ovo-viviparous and the young measure about five inches in length and are produced in August and September.

Common Viper—*Vipera berus.*

The only poisonous snake we have. Again probably fairly common locally throughout the county in suitable districts, such as woods and heaths. Mr. Blathwayt says he used to find large specimens on the drier parts of the commons at Scotton and Scotter during the early part of this century. It wakens late February or early March. Its food consists of young ground nesting birds, voles, field-mice, lizards, etc. Up to 20 young are born in July or August and are very active and will attempt to strike as soon as born. On the approach of man they disappear very rapidly giving rise to the legend that the mother swallows her young. The average length is 20 inches and the largest recorded is 28 inches. It is distinguishable by the black zig-zag on the back with a V on the head. Reddish specimens are found sometimes and are reputed to be fiercer than the normally coloured ones. Some authorities have suggested that these are a different species but this is probably not so. It is quite tameable and will allow itself to be handled but will not feed in captivity.

Development of fangs in poisonous snakes.

Snakes in general show three different types of teeth:

1. Solid teeth and many of them in a long maxilla.
2. Grooved teeth and fewer in the maxilla.
3. Canalised teeth and fewer still, until in the vipers we have only one on the maxilla.

The dental armament of the non-poisonous snakes con-

ists of a number of teeth firmly fixed to the jaws, both upper and lower. The upper jaw being long and fixed carries a number of conical solid teeth all recurved or sloping backwards. The lower jaw which also carries a number of solid recurved teeth, is formed of two bones, the mandible proper, consisting of that part which is horizontal in the mammals and two quadrates which correspond to the perpendicular portions. These are articulated by a hinge joint thus giving a much greater degree of opening than is possible in the mammal. In addition, the two portions of the mandibles are only joined by an elastic membrane in the middle line, thus allowing a snake to swallow prey considerably larger in girth than itself. The absence of the sternum allows its passage further down. In some snakes we find that some teeth are larger than others and that the upper jaw is shorter. These larger teeth show the developmental history of the poison fang. In some snakes the larger teeth are at the hind end of the maxilla (opisthoglypha); in others at the front (proteroglypha). As the maxilla shortens it shows a tendency to become moveable, while the fangs begin to exhibit signs of change. The earliest stage shows just a groove in the enamel of the ontside of the tooth, but in later developmental stages we may find that the groove bas become deeper until the enamel folds round it and forms a complete canal with a small opening near the top of the tooth on the outside and another near the tip. The poison gland is a development of the parotid gland, the first one to swell when we have mumps, and the saliva of all snakes has slightly poisonous properties, which of course becomes more intensified in the truly poisonous varieties. The poison is expressed from the gland when the mouth is opened, into the space between the cheek and gum and is then forced down the groove or canal and so into the wound. I should like to stress the beauty of the apparatus employed for this deadly purpose, for the fang has become in effect a perfect hypodermic needle. The inside of the needle is of enamel and so is kept smooth and burnished and the injection is not retarded because the lower hole is not at the tip

of the tooth but slightly above it, so making it a bevelled point. All these teeth can be and are replaced when damaged or broken.

But the finest and deadliest of all nature's mechanisms has been perfected in the vipers, where the number of maxillary teeth has been so far reduced that the bone carries but one large canalised tooth, and is itself reduced to such an extent that it is merely sufficient to carry this and its successors and is practically square in shape. Also, it has become highly moveable—indeed the fang cannot function until a movement of nearly a quarter of a circle has been achieved. This is accomplished by the action of one muscle in opening the mouth, but five bones are moved to bring the fang, which in the closed position lies concealed in a fold of membrane in the top of the mouth, into position. Luckily our own viper is not of a highly poisonous species and deaths from viper bite are rare in this country, but in India, Africa and South America, the death roll amounts to many thousands annually, in spite of the growing use of anti-venenes Unfortunately, the anti-venene prepared for use against a viper is useless in the case of say, a bite from a cobra and vice-versa. Generally speaking immediate treatment in this country should consist of the application of a tourniquet above the wound, a lancing of the wound itself to produce a good flow of blood, and then to suck the wound vigorously. The poison may be swallowed without harm, but a wound in the mouth or a carious tooth with an exposed nerve may lay the first-aider open to a certain amount of poisoning. Permanganate of potash, applied to the opened wound is a very useful method of dealing with it and although unpleasant symptoms of swelling and discomfort are generally experienced there should be no fear of death for any normally healthy person.

LIZARDS.

THE COMMON LIZARD—*Lacerta vivipara.*

It is probably common throughout the county in suitable places, sandy localities with access to water, being the favourite haunts. It is well-known to most of us and needs no descrip-

tion. Its rapidity of movement, however, makes it difficult to see and still more difficult to catch and a faulty effort may well leave our holding the still vigorously kicking tail while the owner makes good his escape to grow a new one. The new tail is never as good as the original and it is always possible to tell a lizard that has suffered in this way. The new tail, instead of being long and graceful is relatively short and stumpy. Its food consists of insects of all sorts.

The Sand Lizard—*Lacerta agilis.*

This is found on the Lincolnshire coast in the sand dunes. It is larger and bulkier than *Lacerta vivipara* and is generally green in colour but is liable to more colour variation and I have seen one which sported a lovely warm golden livery which glinted in the sunshine. It, too, is often seen with a shortened and deformed tail. All our English lizards and most of the family seem to cultivate this habit, and it seems to be the only form of effective defence which they possess. They do show anger and will bite with sufficient force to leave the impression of their teeth on one's finger, but the teeth are so short that they cannot penetrate the skin.

The Slow-worm or Blindworm—*Anguis fragilis.*

Many people mistake the gentle, harmless slow-worm for a snake and so it is ruthlessly killed. This is a great pity as it is a great destroyer of slugs and insects. It is about 18 inches in length and may sometimes be seen basking in the sunshine and the bronzy colour of the animal is very attractive, but it also likes to move about in the dewy grass and is more apt to be found in damp situations than our other lizards. It shares with them however the power of throwing off its tail when alarmed, and so shows itself a true lizard. Another point which distinguishes it from the snakes is the tongue. In the lizards this is tape-like with a fork at the end, whereas in the snakes it more resembles two pieces of black thread tied together but left loose at the extremity. Another distinguishing factor is that lizards can close their eyes whereas the snakes always keep their eyes open as they have no eyelid.

The young are different in colour, being silvery white and look somewhat like animated darning needles.

AMPHIBIANS or BATRACHIANS.

Frogs *(Ranidae).*

Common Frog—*Rana temporaria.*

It has a smooth skin which is slimy to touch. The males have a greater development of the web between the toes, which is almost complete during the breeding season, and a pair of vocal sacs. They are also distinguished by the presence of a pair of swollen pads on the inner fingers, covered during the bree ling season with black horny spinules. Ground colour varies considerably and may be grey, brown, yellow, or red, spotted and marbled with darker colours. It is terrestrial but may be found during the summer in ponds and will hibernate under the water. The eggs vary from 1,500 to 4,000 in number according to the size of the female and form large floating clumps on the water. The young are released two or three weeks after the eggs are laid and the tadpoles are able to leave the water in May or June. They are later in the north, while in Scotland tadpoles have been known to hibernate. The food consists of worms, slugs and any catcheable insects. They are common throughout the county.

Edible Frog—*R. esculenta.*

Used to be common in Cambridgeshire and it still exists in colonies in Norfolk. We have no record for Lincolnshire, but it would be interesting if it were reported. Probably not indigenous to this country and may have been introduced by the monks or perhaps later by the Huguenots.

Toads *(Bufonidae).*

Common Toad—*Bufo vulgaris.*

Again common throughout the county. It has a warty skin and is not slimy except after shedding the old one and then only slightly. The males are always smaller than the females and vocal, especially during the breeding season. The eggs number from 4,000 to 7,000 in strings wound round aquatic plants, stones, etc. Unlike the frog, it is particular in

its choice of breeding pools, and when favourite pools are near the highway, large numbers are killed by passing traffic. They make interesting pets, easily tamed and will feed on or from the hand. It is very dainty in its method of peeling the gloves off its fingers but not so dainty when rolling it up and swallowing it. It has no teeth but very beautiful eyes. I have often wondered whether Shakespeare ever saw a toad's eye through its open mouth, before referring to the "precious jewel" in its head.

NATTERJACK TOAD—*B. calamita.*

Is found on our coast at Saltfleetby and near Skegness. Any other localities will be interesting as its distribution is uncertain. Greyish or greenish brown with brown or olive markings. Some of the larger warts sometimes show red. The lower surface is dirty white with black spots. It has a yellow vertebral line which is almost always present. Owing to its remarkably short hind limbs it cannot hop but runs along the ground with its body raised. The breeding season is long and may last from the end of April to the beginning of August. The eggs are about 4,000 in number and are laid in strings of two files. It will live well as a pet if kept dry and given opportunities for burrowing.

NEWTS (*Salamandridae*).

They are all aquatic during the breeding season. We have three species of newts:—COMMON OR SMOOTH NEWT—*Molge vulgaris*, CRESTED NEWT—*M. cristata* and PALMATED NEWT—*M. palmata.*

The first two are common enough throughout the county but I have no knowledge of the third. The newts lay eggs singly, attached to the leaves of aquatic plants or stones and the young emerge in from 10 days to 3 weeks time.

COMMON NEWT—*M. vulgaris.*

Three to four inches long. The male has a long festooned crest from neck to tail tip. The female has a ridge. The upper parts are olive brown with black spots in the male and the dorsal crest is usually tipped with red. The female often

has a series of dark dots or a dark line on each side of the back. The lower parts are yellowish white with a median orange stripe spotted with black which is larger in the male than the female. The throat is white or yellow and black spotted and the lower part of the tail is yellow or orange, barred with black in the male. The breeding season is from the end of February to the end of March.

Crested Newt—*M. cristata.*

It has a tail as long or very little shorter than the head and body. The male has a very high and deeply dentated dorsal crest replaced by a longitudinal groove in the female. The male also carries during the breeding season a lower crest on the tail, sometimes toothed like the dorsal one. The skin is more or less tuberculated and the colour brown, black or olive above with black spots, and a yellow vertebral line is sometimes present in the female. The sides are speckled with white. The breeding male's head is marbled. The under surfaces are bright yellow with black rings. A silvery white band in the breeding male along the side of the tail and a uniform orange lower edge in the female provide *cristata* with a very handsome livery. It breeds in April, May and June, but neither this nor *vulgaris* do well in captivity as they usually leave the water after breeding and refuse to feed and so starve.

Palmated Newt—*M. palmata.*

Skin smooth as in *vulgaris.* The head is like the latter except that the snout is broader. The male has a low and entire vertebral crest and the female a low ridge along the middle of the back. The toes are webbed in the breeding male, but freer in the female, and the crested tail ends in a short filament in the male. The colour is brown or olive above, with small dark spots which are very numerous on the head. The lower parts are uncoloured except for the median zone of the belly which is yellow or orange. It sometimes has a few spots, but never on the throat which is white and this serves as an important character in identification from

vulgaris. The lower edge of the tail is yellow or orange in the female, blue grey in the male.

And now, Ladies and Gentlemen, I want to thank you for all your klndness to me during the past two years. I shall always remember them with pleasure and I do feel it a great honour that I should have had the time with you as your President. I should also like to thank you for your kindness in listening to me for the second time and can only express the hope that I have not wearied you too much. To our new President, Mr. Court, may I express the hope that we may have more field meetings next year and to our Secretary I should like again to say 'thank you'. Some day the L. N. U. will return to its old routine or perhaps an even wider programme, which I hope may embrace winter activities both field and indoors, but for that we may have to wait some time. In the mean time let us keep up our membership and all do what we can to increase it, and then we can with confidence look forward to better things to come.

Ladies and Gentlemen, again I say thank you.

Reference.—Boulenger, E. G. Reptiles and Batrachians, 1914.

SOME NOTES ON THE CORIXIDAE.

Miss Jean Wans, B.Sc.

The Corixidae are a family of small freshwater bugs belonging to the *Hemiptera-Heteroptera* group of the Insecta. In common with other members of this group the waterboatman has, besides the usual insectan characteristics special features such as the adaptation of the mouth parts for sucking, and incomplete metamorphosis in their life-history. It has two pairs of wings, which differ from each other considerably in consistency, and the mouth-parts, or *rostrum*, are slightly extended, but can only be seen from the underside of the animal; these characteristics place it in the family Corixidae.

The various species of the family range from 1.25 m.m.

to 14 m.m. in length and are more or less yellowish-black to black with golden yellow stripes; the surface of the outer pair of wings may be smooth or corrugated on the outside. For many species a more dependable feature for identification purposes than colour, is found in the male; in both sexes the front leg is short and the distal segment somewhat sickle shaped; in the male this bears a number of short pegs of constant and characteristic arrangement (*see* fig.). On the whole, the coloured markings in any one species may vary considerably even in one district. For the identification of some species an examination of the shape of various segments of the body and parts of the genital organs is necessary.

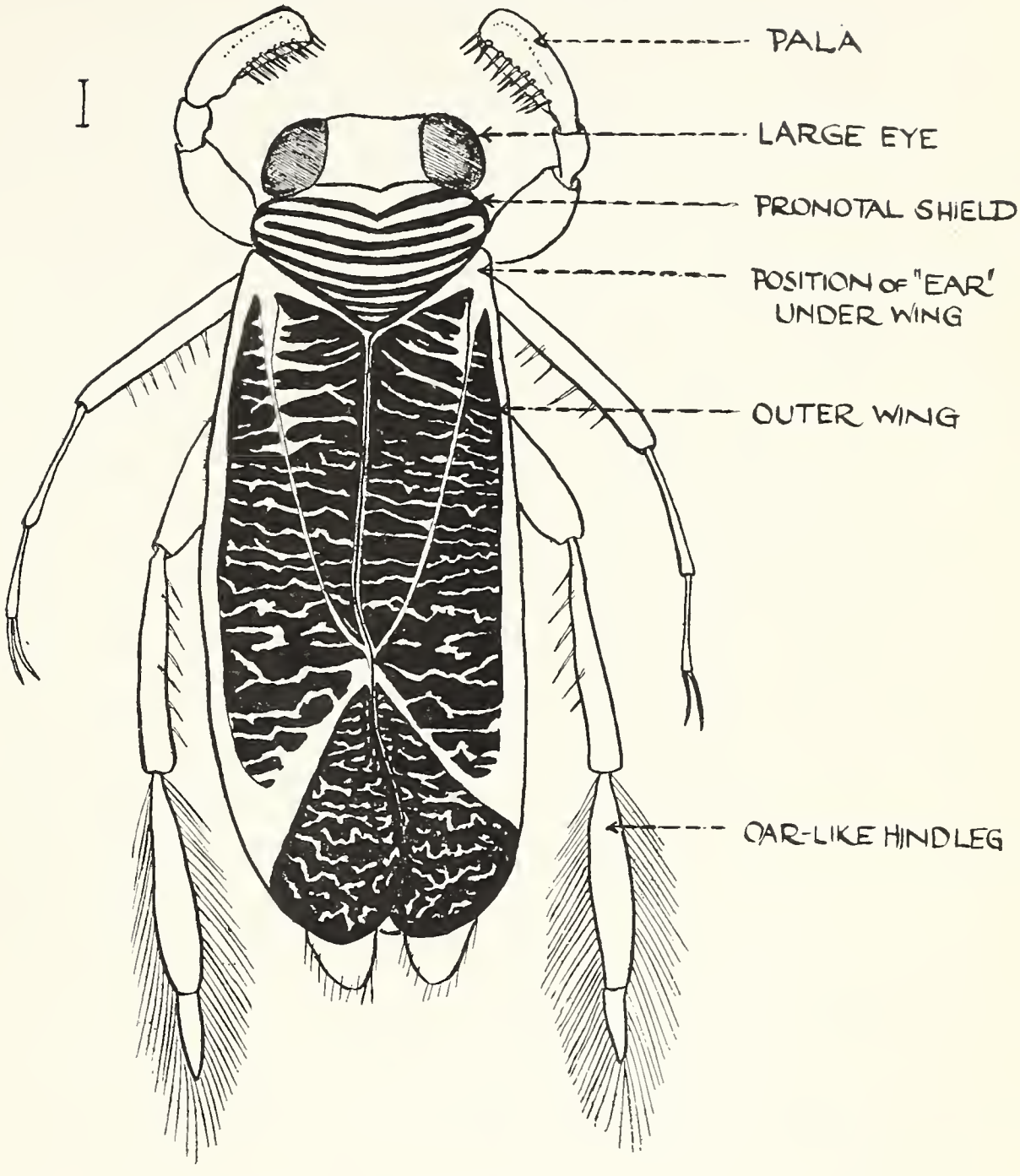
The structure of the waterboatman shows several adaptations to life in water. Like other aquatic insects it depends upon atmospheric air for breathing purposes. To facilitate lengthy stays under water the waterboatman has a space between the wings and abdomen in which air is stored. All the spiracles open into this cavity, so that the insect can remain submerged until the air is used up and then it rises to the surface to exchange the vitiated air for a new supply: this is done by lying just under the surface with one of the outer edges of the slightly opened elytra breaking the water surface. Another adaptation to life in water is the oar-like formation of the hind legs which serve to propel the animal quickly through the water (*see* fig).

The waterboatman lives in slow flowing or stagnant water, where there is some cover to be found either among growing water weeds or in plant debris at the bottom of the water. Its independence of the oxygen content of the water allows it to live in water more stagnant than would be possible for animals not so equipped. Some forms will live in small ponds which are very stagnant, while others prefer fresher water; *Sigara praeusta* and *Sigara sahlbergi* are two forms which frequently occur in foul water. A waterboatman appears to be able to come and go from a pond, for it has a well developed pair of flying wings folded up under the protective elytra; this may be a way of escape supposing the

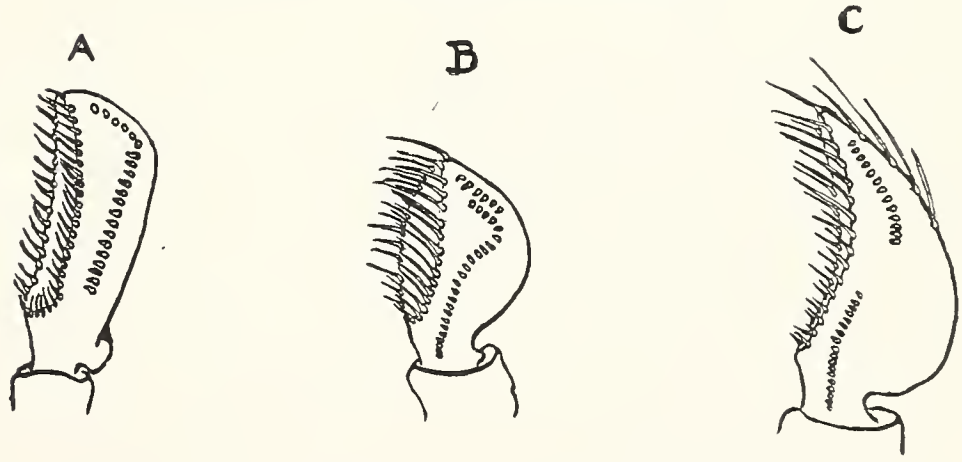
water of a particular pond becomes fouled beyond what a particular species can tolerate. If a shallow pool is watched on a warm and sunny day one may be fortunate enough to see waterboatmen arriving and leaving. This was seen at a small pool in a field in Welbourn several years ago: it was also found that if one of the insects swimming just below the water surface was chased with the hand it took short flights to escape or some even flew to the other side of the pond. This might help to account for the fluctuation in number and species of corixids found when certain stations were regularly worked in one pond over a length of time. It was found that in a series of gravel pits all fairly recently excavated, but some a little older than others, waterboatmen were living in the most recent in the series of pools to be inhabited by non-microscopic animals.

The Corixidae live on plant juices, sucked up through the rostrum and they also make use of the vegetation in the water they inhabit by attaching their eggs to the stems of water plants, etc. In the summer months many immature forms, or nymphs, are found, while comparatively few adults may be seen. The nymphs differ from the adults in their smaller size, undeveloped wings, and the paler colour of the body; after subsequent moults the typical size, colour and fully formed wings appear. When a waterboatman is watched in an aquarium or in clear water it is seen to spend much of its time holding on to some solid object with the claws of its middle pair of legs. This is because the air enclosed under the wings causes it to rise gradually to the surface when it is not moving. During the winter the waterboatmen tend to withdraw to the warmer water at the bottom of a pond or among the stems of water weeds or among fallen leaves and other debris: they become less active, making only periodic expeditions to the open surface waters on warm days, sunshine particularly attracting them. During the time of inactivity, visits to the surface to renew the supply of air are at long intervals, as respiration is at a very low level. The waterboatmen are an item of food for other aquatic animals, notably the carnivorous

WATERBOATMAN



SIGARA SAHLBERGI [MALE]



MALE PALAE
SHOWING DISTINCTIVE ARRANGEMENT OF PEGS
A. S. SAHLBERGI. B. S. SEMISTRIATA C. S. DISTINCTA
(ENLARGED)

waterbeetles and the Great Waterboatman—*Notonecta*, who both for protection and to follow their food supply are found with corixids in the more sheltered parts of a pond in winter.

It is interesting to notice that in common with several other of the Hemiptera, the waterboatman has a well developed pair of auditory organs working in conjunction with the respiratory system. One of the pair lies on each side of the mesothorax, a little in front of the spiracle, in a special pocket under the wings; there is a vibrating membrane with a receptive organ growing from it and projecting into the reservoir of air held under the wings. It is interesting to note that the auditory apparatus of a normally totally submerged animal should be situated so as to pick up vibrations in air. It seems possible that the pegs on the male pala are used as a stridulating organ.

It is impossible to make definite assertions on the distribution of species in a given locality until exhaustive work has been done, and records from all parts have been considered. Where records have been taken an effort has been made to see if there is any connection between the species identified and the type of habitat, as compared with other records, and so far, one or two suggestions may be made.

Of the 15 species recorded in the last 5 years in Lincolnshire, *Sigara nigrolineata* seems to occur most frequently and under varying conditions; one habitat being a small stagnant pool fouled by cattle and refuse; another having a high iron content in the water; yet another was a pool choked with moss, while the fourth was a small pool almost bare of vegetation. It appears to be a dominant species in the Waddington and Wellingore areas. A species which is usually associated with stagnant water, *Sigara praeusta*, was actually found to be dominant in two ponds which contained evil smelling water with much scum, but other records of this species were few. *Sigara lateralis (hieroglyphica)* also appeared most abundantly in foul water, and was only recorded in small numbers in fresher water Other species have been recorded in small numbers and in varying localites. The most commonly

occuring forms so far recorded have been *Corixa punctata*, (*geoffroyi*), *Sigara lateralis (hieroglyphica)*, *Sigara striata*, *Sigara nigrolineata* and *Sigara praeusta.*

Species identified in Lincolnshire (mainly in the Waddington-Potterhanworth-Wellingore areas) since 1937 :— *Corixa punctata (geoffroyi)*, *Corixa dentipes*, *Sigara lateralis (hieroglyphica)*, *Sigara linnei*, *Sigara sahlbergi*, *Sigara striata*, *Sigara distincta*, *Sigara falleni*, *Sigara venusta*, *Sigara nigrolineata (fabricii)*, *Sigara fossarum*, *Sigara praeusta*, *Sigara wollastoni*, *Sigara carinata*, *Cymatia bonsdorffi.*

Report of the Hon. Secretary and Treasurer, 1941.

It is with pleasure that I record the resumption, during this second year of war, of some of the Union's normal activities. Two Field Meetings were arranged, one in the north, the other in the south of the County. The attendance at the meetings was most encouraging. Over 40 members and friends were present on each occasion.

The 199th meeting, the first since the outbreak of war, was held at Linwood on 31st May. Mr. T. H. Court was responsible for the day's programme and made all the local arrangements. The day was a most interesting one and was enjoyed by a large number of members and friends. Lord Heneage gave permission for the woods in the vicinity to be visited and Mr. J. G. Dring for his property in Legsby. Details of observations made during the course of the meeting are recorded by the Sectional Officers. Tea was taken by invitation of the President at the Gordon Arms Hotel, Market Rasen. After the tea, the proceedings of the day were reviewed at a meeting presided over by the President.

The 200th meeting on 5th July was in the Sleaford district. Mr. F. L. Kirk, who had made the local arrangements, met the party and conducted them during a most interesting

day. Sir George Whichcote gave permission for Aswarby Thorns to be visited. This proved to be a very attractive piece of ground which would repay closer investigation. At Spanby Woods, our member, Capt. W. A. Cragg welcomed the party and provided refreshment at lunch. It was noticeable that in very similar country to Aswarby many of the species noted there were absent at Spanby. Tea was taken at the Three Kings Hotel, Threekingham. The President presided at the meeting following the tea. Reports were presented by the Sectional Officers and others present.

We are grateful to all who have contributed to the success of these meetings and particularly to members with cars for the valuable help given in transport arrangements Without this help it would have been impossible to visit these interesting localities

The Ornithological Section is to be commended on launching a new venture in difficult times. The Secretary, Mr. S. A. Cox, with the co-operation of other ornithologists, has compiled a portfolio which will be circulated in due course. The response to his appeal for contributions and observations has not been too encouraging. Mr. Cox is anxious that more contributions should be available for circulation in this way. May I appeal to all interested in bird problems to co-operate with him in giving this venture the success it deserves.

Membership has again decreased slightly. It is unfortunate that some have allowed their membership to lapse and in addition there have been resignations and losses by death The present membership is 201; a decrease of 13 on last year. Twelve new members have been elected during the year—

Dr. W. D. Evans, Geological Survey, S.W. 7
Rev. Dr. A. Hall, 82 Yarborough Road, Lincoln.
Mrs. A. Hall, 82 Yarborough Road, Lincoln.
Mr. Alan Hoggett, De Aston School, Market Rasen.
Miss. F. E. Mann, Old Place, Horbling.
Mr. Bert E. Moore, Blakeney, Moreland Avenue,
Sutton-on-Sea.

Mr. L. Ottaway, "Four Winds", Trusthorpe.
Miss Heather Powell, 32 Curle Avenue, Lincoln.
Miss C. Russell, Grove House, Louth.
Miss E. M. Thorp, Grosmont, 16 Harrowby Lane, Grantham.
Miss M. Tyson, New Market, Louth.
Mr. A. J. Watkins, 17 Hawthorn Avenue, Gainsborough.

It is with regret that I record the death of another of our original members. Mr. G. H. Caton Haigh of Grainsby Hall died in February after a close association with the Union since its inception in 1893. He was a past President and President of the Vertebrate Zoology Section. An account of his ornithological work appeared in "TRANSACTIONS" 1917. In the opening paragraph the following tribute was paid to his work in Lincolnshire—"Lincolnshire, in proportion to its size, has not been favoured with the possession of many first-class ornithologists; but among those who have studied and written about the County avifauna, two names will always stand out prominently: those of John Cordeaux and Mr. G. H. Caton Haigh". Mr. Caton Haigh followed John Cordeaux as the authority on the problems of bird migration as observed on the N.E. coast of Lincolnshire and it was on this subject that he delivered his Presidential Address in 1913. He was an authority on one of the most difficult groups—the Warblers—and added several new species to the British List. He was a frequent contributor to the "TRANSACTIONS" and to many scientific journals particularly "The Zoologist" and "Britsh Birds". Mr. Caton Haigh was seen only occasionally at our meetings but he was always ready to advise and assist in every way possible: his death is a great loss to us and to British ornithology. Miss A. J. Bott of Grantham was accidentally killed in January. She was a geologist and had been associated with us since 1937. Another member of the geological section, Mr. D. J. McCall died in June after 10 years membership; the help of both will be missed in the geological section. A further loss was sustained by the death of Mr. Harold Wood of Grimsby in

December. He had been a member since 1922 and had shown keen interest in our work.

The financial statement is printed on an earlier page. Members' subscriptions were well maintained and expenses were below normal, leaving a satisfactory balance of £17 5s. 1d in the bank at the close of the year.

The Annual Meeting was held at the Lincoln Technical College on 15th November. The Presidential Address and Sectional Officers' reports are printed in these pages.

Sectional Officers' Reports.

BOTANY.

Miss E. J. Gibbons.

Two Field Meetings have been held this year in good weather. The cold dry spring made flowers later than usual so that Linwood Warren had not many to show. However, the Legsby woods were very springlike with glades of bluebells and bracken. Among others were noted Lousewort (*Pedicularis sylvatica*), Needlewhin (*Genista anglica*), Marsh Violet (*Viola palustris*), Bogbean (*Menyanthes trifoliata*), Panicled sedge (*Carex paniculata*), Wood Forget-me-not (*Myosotis sylvestris*), Water Avens (*Geum rivale*), Ramsons (*Allium ursinum*), Wood Sorrel (*Oxalis Acetosella*).

At Aswarby Thorns, near Sleaford, many interesting plants were found, 14 of them being district records. Others of interest were: Dyers Greenweed (*Genista tinctoria*), *Orchis pyramidalis*, Oxtongue (*Picris echioides*), Buckthorn (*Rhamnus catharticus*), Dropwort (*Spiraea filipendula)* found in different places during the day.

Two finds of Blue Pimpernel (*Anagallis foemina*) have been submitted, one being of particular interest from Holywell, where it has been recorded several times before, the earliest date known being 1836. This shows that it cannot be classed as a casual there but it would be interesting to know whether it appears regularly or only intermittently.

Several members have sent in records of plants found, many of which can be entered as district records. Among these are:—

	Division.	
Achillea Ptarmica	14	Mr. F. L. Kirk
Anagallis fœmina	7	Mr. R. K. Cornwallis
Anthriscus Cerefolium	15	Miss D. Thackeray
Carex pulicaris	14	L. N. U.
Chenopodium capitatum	3	Mr. R. May
Hypericum humifusum	14	L. N. U.
Lemna gibba	13	Miss J. Gibbons
Nardus stricta	14	L. N. U.
Orchis latifolia	3	Miss M. Gibbons
„ „	10	Mr. F. Kime
„ *Morio*	10	Miss D. Marsden
Panicum Crus-galli	17	Mr. F. Waite
Picris Echioides	17	Mr. R. Wells
P. hieracioides	13	Miss J. Gibbons
Potamogeton perfoliatum	5	„ „
P. praelongus	12	Mr. R. Wells
Senecio viscosus	12	„ „
Stellaria aquatica	15	Miss J. Gibbons
Typha angustifolia	14	L. N. U.
? *Cuscuta Tinei-Insenga* (introduced with imported carrot seed)	3	Mr. F. T. Baker

CONCHOLOGY.

J. F. Musham.

Interest is still being maintained in the rich deposit at Broughton, but prevailing conditions, helped by the weather, have combined to frustrate opportunities when they have arisen. The Scawby section is still unfinished with the exception of the first attempt, which was as productive as others in the area.

The examination of the above was not completed until

February 7th 1941. It yielded 52 modern shells *(Cecilioides acicula)* and 404 molluscan ova.

At the end of October Mr. Shillito kindly informed me that he had just secured two samples "from near the stream". These are now in the process of cleaning and will be reported on in due course.

Our best thanks are again tendered to Mr. A. S. Kennard for checking and verifying the more critical species.

I have no report from the year's Field Meetings, or from local observers.

ENTOMOLOGY.

F. L. KIRK, B.Sc.

This has been an unusual season. The prolonged cold weather in the spring interfered seriously with insects and at one time it looked as though we should have a very poor year. Later there was a recovery during the hot spell about July and several interesting and unusual records have been obtained.

Among the outstanding events was the capture of a White Admiral Butterfly (*L. sibylla*) in Lincolnshire. This record is on the authority of Mr. C. Taylor of Lincoln. I am not at liberty to give the exact locality and hope that the species will not be prevented from gaining a firm foothold in our county by undue enthusiasm for collecting. I have not come across a Lincolnshire White Admiral, but for some years have known of a locality for this lovely insect within a few miles of the Lincolnshire border. Old records before 1900 state that it used to be found in several parts of the county. I trust it will again become well established.

Another noteworthy record was the beautiful variety of the Dark Green Fritillary *(A. aglaia)* taken by Mr. T. H. Court at Mareham Lane on July 5th. A somewhat similar form is illustrated in Frohawk's "*Natural History of British Butterflies*", but the variety obtained is much more striking with its bold dark markings and handsome underside.

A third insect of note was the variety of Clouded Yellow

(*C. edusa* ab. *pallida*) taken by Mr. F. T. Baker at Kirmington on July 10th. This is a whitish form of the butterfly only known to occur in the females.

On July 25th Mr. T. H. Court sent word that he had discovered the Greasy Fritillary (*E. aurinea*) near Market Rasen. This is a species which has disappeared from many of its old haunts and it was welcome news that it had appeared again. Blackish varieties of the Small Pearl-bordered Fritillary (*A. selene*) were also found and melanism appears to have been more frequent than is usual.

1941 has been a Clouded Yellow year. At the end of August, Captain W. A. Cragg reported that he had seen two Pale Clouded Yellows (*C. hyale*) at Spanby. He added the interesting information that Clouded Yellows were often seen about Spanby a quarter of a century ago, but not since that time. The Clouded Yellow (*C. edusa*) occurred at Kirmington, where Mr. F. T. Baker saw a male on the same day that he took the above mentioned variety. Mr. A. Smith reported several Clouded Yellows near Alford. Mr. R. May saw specimens at Limber on August 27th and 31st and the first three days of September; they were on Black Knapweed, Birdsfoot Trefoil, White Clover and Autumnal Hawkbit. On September 3rd a Clouded Yellow was seen at Skellingthorpe by Rev. G. Houlden and a female was taken at Saltfleet on September 16th. Mr. A. Chambers sent word that he saw one Clouded Yellow at Belton on September 13th.

The Comma Butterfly (*P. c-album*) has been reported from many Lincolnshire localities at various dates throughout the season. Mr. A. Chambers kindly sent a full report of his observations on this species.

On July 28th the White Letter Hairstreak (*S. w-album*) was abundant at Rauceby and the same day a High Brown Fritillary (*A. cydippe*) was taken at Ancaster; this is the first time I have seen it at that place.

The Chalk-hill Blue (*L. corydon*) was on the wing at Ancaster on August 4th.

There was a fine display of the late summer and autumn

butterflies. Peacocks (*V. io*) were particularly abundant and the Painted Lady (*P. cardui*) has been widespread.

Our two Field Meetings were both interesting to entomologists. At Market Rasen on May 31st, Green Tiger Beetles (*C. campestris*) were common and one was found devouring an ant. Burying Beetles (*N. mortuorum*) were seen eating a dead toad which was partly submerged. A Wood Tiger Moth larva (*A. plantaginis*) was picked up but later proved to be stung and, of course, died.

At the Mareham Lane Meeting on July 5th the Dark Green Fritillaries (*A. aglaia*) were a wonderful sight. Many of the females were just emerging. At Spanby a Scarce Green Silverlines Moth (*H. bicolorana*) was caught and members were interested in the fine specimens of the Flat-bodied Dragonfly (*L. depressa*) flying over a pond on Captain Cragg's estate.

The Hawk Moths have been much in evidence particularly in the caterpillar stage. Mr. A. Chambers showed me a large Death's Head larva (*A. atropos*), one of three obtained at Grantham. He saw the Humming-bird Moth (*M. stellatarum*) on October 6th at Belton. Lime Hawks (*S. tiliae*) and Elephant Hawks (*C. elpenor*) were seen at Donington and the former species also at Lincoln. The Convolvulus Hawk (*S. convolvuli*) was taken at Limber. There are several records of Poplar Hawks (*S. populi*) and Mr. Kime sent me a larva of the Eyed Hawk (*S. ocellatus*) from Boston.

Owing, no doubt, to war conditions, few records of other moths have come in. On July 3rd the Large Angleshades (*P. meticulosa*) was caught at Donington, and on July 24th there were quite a number of the Common Footman (*L. luridcola*) at the same place. At Market Rasen the Large Ranunculus (*P. glavicincta*) and the Sword Grass Moth (*C. exoleta*) were found.

The Red Underwing (*C. nupta*) has been common; a specimen was sent in from Swineshead as late as November 4th

Two more Musk Beetles (*A. moschata*) a male and a female were obtained this season at Swineshead and Donington.

The Four-spotted Dragonfly (*L. quadrimaculata*), the Beauty Dragonfly (*A. splendens*) and the Common Ischnura Dragonfly (*I. elegans*), together with a magnificent male Emperor Dragonfly (*A. imperator*) occurred at Donington in mid-July and a fortnight later the Ruddy Sympetrum (*S. sanguineum*) and the Common Damsel Fly (*E. cyathigerum*) were found.

May I thank all those members who have so kindly supplied me with records; in cases where these records do not appear in this report they are valuable for keeping the County Records up to date. I have also received letters from members who are now outside the county and although we cannot include their remarks in a county report it is a pleasure to know that they do not forget us.

I will close with a suggestion to younger members. If any of them can study one of the less popular orders of insects they will probably add considerably to our knowledge of the Fauna of Lincolnshire.

NOTES ON THE ECONOMIC ZOOLOGY OF LINCOLNSHIRE DURING 1941.

A. Roebuck, N.D.A., F.R.E.S.

The survey of the wireworm population of grassland to be ploughed up has been continued. As more and more districts are being surveyed it is hoped in time to get a complete picture of the distribution of the species throughout the County. The average population of wireworms on the grassland so far sampled is about 750,000 per acre. In this total only those over 5 m.m. in length are counted, that is the ones capable of damaging crops. Damage was done by these pests chiefly to wheat and oats. Onions were destroyed at Scotter. This is a very susceptible crop and should not be grown on newly ploughed land.

In September 1940 the most important pest species of Daddy Long Legs Fly (*Tipula paludosa*) was very abundant, busily laying eggs. By December in the soil samples leather-

jackets were present. It was then possible to forecast an epidemic and arrange to combat it. Although some damage was done to flax, cereals and peas most of these pests were controlled.

Cereals.

Frit Fly (*Oscinella frit*) attacked oats slightly in most parts of the County, the attack in the grain being most severe. It attacked the bases of the wheat shoots around Habrough and also in the Isle of Axholme. Gout Fly *(Chlorops tæniopus*) was more troublesome on the barley crops than for many years. Hessian Fly *(Mayetiola destructor)* occurred in small quantity on wheat at Middle Rasen. The leaf miner fly *Domomyza ambigua* was very abundant, mining the leaves of wheat and barley especially between Grantham and Lincoln. A few wheat sawflies *Cephus pygmaeus* occurred at Thoresway. The aphis *Macrosiphum granarium* and the thrips *Limothrips cerealium* were abundant locally chiefly on the ears of wheat and oats.

Pulse Crops.

The eelworm *Anguillulina dipsaci* was destructive to clovers in the Horncastle district. The springtails *Onychiurus ambulans* and *Achorutes purpurescens* fed on germinating peas in the ground at Lincoln. The pea aphis (*Macrosiphum pisi)* was locally abundant and harmful. The worst outbreak was at Sturton by Stow. The weevil *Sitona lineatus* did much damage on a field of peas at Coningsby. The black aphis, *Aphis fabae (rumicis*) was remarkably scarce. There had been no eggs on *Euonymus* bushes the previous winter.

Roots and other Crops.

The leaves of the sugar beet crop were holed by the larvae of the Carrion Beetle (*Silpha* sp.) at various places between Lincoln and the Isle of Axholme. In the Isle the larvae of the beautiful *Cassida vittata* also fed on the leaves of this crop. The Mangold Fly *(Pegomyia hyoscyami* var. *betae*) was scarce. The Pigmy Mangold Beetle *(Atomaria linearis)* did slight damage to crops in the seedling stage and so did the Flea Beetle (*Chaetocnema concinna*) in various places. The

caterpillars of the Silver Y Moth (*Plusia gamma*) did some damage late in the season to mangolds, beet and swedes.

On potatoes the caterpillars of the Rosy Rustic Moth (*Hadena micacea)* were widespread tunelling the bases of the stems. The capsid bug *Lygus pabulinus* was particularly abundant on potato fields around Cammeringham.

The Cabbage Root Fly (*Delia brassicae*) did much damage again to the planted brassicae. The Mustard Beetle (*Phaedon cochleariae*) did damage to mustard crops in the fens and the aphis *Brevicoryne brassicae* severely damaged a field of mustard grown for seed.

The eelworm *Anguillulina dipsaci* caused severe damage to a crop of onions near Stamford. As no onions had been grown on the field previously the eelworm must have passed to the crop from weeds.

Fruit and other Trees.

The unusual Social Pear Sawfly (*Neurotoma flaviventris*) appeared at Horbling. The Lackey Moth (*Clisiocampa neustria*) another tent feeder occurred in an orchard at Stamford.

The Big Bud of Hazel caused by the mite *Eriophyes avellanae* occurred at Linwood and is widespread. The Larch Sawfly (*Lophyrous sertiferus)* was bred from larches in the north of the County.

The pretty beetle *Rhagium inquisitor* appeared common on the ash trees. *Tortrix viridana* extensively defoliated oaks in Kesteven. In Aswarby Thorns a hawthorn tree was completely defoliated and covered with the webs made by the larvae of the moth *Scythropia crataegella*. Many of the leaf miners in Sycamores named *Lithocolletis* in last year's "TRANSACTIONS" turned out to be the sawfly *Phyllotoma aceris*. From being abundant in 1940 it became remarkably scarce in 1941.

The aphis *Ceruraphis eriophori* was taken in quantity on Guelder Rose (*Viburnum opulus*) and *Aphis frangulae* on Purging Buckthorn (*Rhamnus catharticus*).

Miscellaneous.

The chief species of beetles of note in foodstuffs were *Ptinus tectus* in rice meal, *Necrobia rufipes* in liver meal and

Sitodrepa panicea in biscuits. The Scale insect *Lecanium formicarum* occurred in soil.

An example of one species transporting another was noted. A Carrot Fly (*Psila rosae*) was found carrying on its body a Beetle Mite (*Gamasus coleopterum*) from one locality to another. A good example occurred illustrating how a perfectly harmless insect may become an alarming nuisance. A granary was suddenly invaded by what seemed to be swarms of small winged ants. These really were the Gall Flies (*Cynips kollari*) from oak apples from the surrounding trees which had inadvertently entered the building.

ORNITHOLOGY.

S. A. Cox.

Opportunities for the study of bird-life have again been fewer than usual, and lack of travelling facilities has confined our activities to a small radius.

On December 31st, 1940, Mr. R. May counted seventy-two Bewick's Swans flying over the wolds near Hendale Lodge. It must have been a wonderful sight.

A Water Rail was flushed from the banks of the river Freshney on January 12th, 1941, and on the same day a pair of Stonechats were flitting about a piece of waste ground nearby. Mr. F. Brewster reported that on January 15th there was a Great Crested Grebe in the Alexandra Dock at Grimsby. On January 19th I was delighted to hear Snow Buntings calling in flight over Old Clee, for military restrictions have prevented access to the coastal dunes, their normal winter haunt.

Newsham Lake can generally be relied upon to provide something of outstanding interest in the way of wild-fowl during the first few weeks of the new year, and on February 2nd I was privileged to see nine Whooper Swans, a single Smew and an immature Goldeneye. The Smew, an immature bird, was at first mistaken for a Slavonian Grebe. The larger size of the Smew and its prominent white cheeks, which show

up more plainly than in the Grebe, were distinguishing characters. Experience with the Slavonian Grebe had emphasised its reluctance to fly and its habit of diving when taking refuge. The Smew, however, readily took to the wing with other ducks.

A week later the number of Whooper Swans had been augmented, and we counted fifteen on Lambert Hill pond, the biggest number we have ever known.

Redwings were heard passing by night for the last time on March 20th.

On April 11th the Willow Warbler was heard in Legsby Woods. A Common Sandpiper was disturbed at the edge of Croxby Pond on April 20th, and the first Swallow appeared. Three nests of the Long-tailed Tit were seen in hawthorn, yew and privet. On that date Bramblings were still lingering in their winter haunts.

The Yellow Wagtail and House Martin appeared at Brocklesby on April 27th, a single bird in each instance, though Sand Martins were abundant, and had probably been present along the canal for several days. Five more nests of the Long-tailed Tit were seen in gorse, gorse again, privet, yew and spruce fir. The nest of a Tawny Owl in a Cedar of Lebanon at Limber contained two eggs.

On May 4th Croxby Pond was again visited, and the day was remarkable for a deluge of migrants, a phenomenon which frequently marks the first week in May. Both species of Whitethroat were heard. The Common was generally distributed, but the Lesser was, as usual, confined to thicker cover in two localities on the outskirts of the woods. Blackcaps were heard for the first time, and the song of the Garden Warbler was scarcely less melodious. The song of the Sedge Warbler was equally distinctive, but hardly musical. Young Coots were seen on the pond, and a Tawny Owl was disturbed from an old carrion crow's nest in a tall spruce fir. A particularly arduous climb by Mr. Ottoway was rewarded by the presence of a single egg.

The Grasshopper Warbler was back again in its old

haunts at Swallow Vale on May 10th, and on the same afternoon the Chiff-Chaff was heard in Mausoleum Wood, though this can scarcely be considered a first record for one of our earliest spring visitors.

A second Coot's nest was found amongst a clump of flags at Croxby Pond on May 11th. It contained five eggs. The nest of a Tree Creeper behind loose bark, discovered a week earlier, now contained at least two eggs. A Moorhen, on leaving its nest, submerged and swam at least twelve yards under water to the nearest aquatic vegetation.

Swifts were seen for the first time on the outskirts of Grimsby on May 10th. Cuckoos were abnormally late—I heard the first on May 17th—my worst ever! I also heard the Turtle Dove on the same day, more than a fortnight later than Miss Gibbons.

Croxby Pond was again visited on May 18th, and the keeper showed us the nest of a Tree Creeper which had built inside an outhouse. Access was gained by a small crack in the timber, and the nest contained five young. Both parents came repeatedly with insects and fed them. Climbing a hollow ash I found a hole occupied by a Jackdaw, which was brooding three eggs. By the nest were the half-devoured remains of a Missel Thrush's egg which had been well incubated. Immediately above the Jackdaw's hole was a second hollow, in which a Tawny Owl was incubating two of its own eggs and two Jackdaw eggs, presumably the remainder of the clutch, as three is an abnormally small brood. On the pond a third family of Coots had been safely hatched. The nest, in this case, was in a clump of reed-mace

The first Spotted Flycatcher was seen at Grimsby on May 29th, another belated record for this, our latest summer visitor. It will be seen that many of our commoner migrants completely escaped my notice, though I came across most of them later in the season.

Although the wind was rather cool, the weather was bright and fine for the L.N.U. meeting at Linwood. The best birds seen were the Grasshopper Warbler, Chiff-Chaff, Coal Tit and

Tree Creeper. A Tree Pipit left its nest and five eggs in a patch of ling, and flew into a neighbouring birch.

After the meeting several members motored over to Limber, where Mr. May and Captain Blacker joined us, and with the aid of a ladder we set off to examine the nest of a Redstart in a decaying oak. Six people, a dog and a ladder were crowded into a small car, and it is scarcely to be wondered that the locals mistook us for the A.F.S.

We believe that the Redstart nests more or less regularly at Scawby, but prior to 1941 we ourselves have only known it as a scarce visitor on spring and autumn passage. The sitting bird left on being disturbed, and uttered the plaintive alarm which it shares with the Chaffinch and Nightingale. The nest, which was composed of dead grasses and leaves, and lined with white feathers, was some distance inside a hollow branch. At least one pale blue egg could be discerned. The rather scrappy, metallic song of the male Redstart was heard during the course of our visit, but we were unable to stay very long, for we had still much to crowd into a short evening. In the same oak as the Redstart were the nests of a Blue Tit and a Tree Creeper—truly a cosmopolitan gathering!

Alighting next at Hendale Lodge, a fine view was seen of a Turtle Dove, with which these particular woods seemed to be alive. There were two pairs of Nightingales in a small area, and it was to the nest of one of these that we were to be taken. It was built just clear of the ground among the dead stems of rosebay and nettles in a small clearing, and the russet sheen of the bird's plumage glinted in the evening sunshine as she slipped quietly off the nest. The eggs, which were olive-brown, were highly polished. Fragments of Nightingale song were heard spasmodically, and we departed very regretfully from these beautiful woods. Before doing so, however, we flushed a Willow Warbler from its domed nest, which was built on the ground in a clump of fern and bramble by the woodland ride. Inside were seven eggs.

Newsham Lake was our next port of call, and we at once made our way to a young plantation on the north side of the

lake, where a Grasshopper Warbler had once again taken up its residence for the summer. This was intersected by numerous ditches, and was consequently very damp. Mr. May at once led us to the nest, from which the bird crept, mouse-like, with scarcely a movement of the undergrowth. It was located in a tuft of rough grass, and both Mr. May and myself remarked upon its similarity to a Robin's nest. The eggs numbered seven.

A Kingfisher had again nested in a bank near the weir—the same spot where we saw its nest several years ago. The excavation was, on this occasion, somewhat deeper, but a torch enabled us to see the quills of the young birds, which emitted the usual churring calls.

A marshy field, where we had long hoped to see a Snipe s nest, was then visited, and we were escorted to a tuft of rushes, from which the sitting bird at once rose. The nest contained four eggs. On the return journey nests of the Garden Warbler and Turtle Dove were seen in adjoining bramble clumps. Few are privileged to see such a wealth of rare nests in a single evening, and we were amazed, as we stood on the bridge at Newsham Lake, to discover that the time was 10-45 p m.

On the following day, June 1st, the keeper at Croxby Pond showed me the nest of a Bullfinch, and I had a fine view of the hen bird, with her white rump, as she left. It was in a beech sapling, and contained four eggs. Seeing an owl peering from a hollow tree, we secured a ladder and found that the cranny contained a young Tawny Owl and an unhatched egg. The wing feathers of the young bird were just showing through its down. The brood of young Tree Creepers, first seen on May 18th, were obviously ready to leave the nest, for three were climbing to the woodwork of the outhouse, with their bills held upwards. Even as we watched they took their first trip into the outer world, and the skill with which they ascended tree trunks was little inferior to that of their parents. When we left, the surrounding trees seemed full of their tiny, shrill, piping voices. On the same day the nest of a Great

Spotted Woodpecker was located in a decayed ash. Actually, there were three borings, and it was the uppermost of these which was tenanted. The lower one contained an old wasp's nest.

On June 18th the young Grasshopper Warblers flew from their nest near Newsham Lake, and we were amazed when Mr. May informed us that he had found a second nest with five eggs in a young plantation at Limber in a precisely similar spot. A nest of the Grassbopper Warbler was found at Barton-on-Humber in 1923, but although the bird is a regular summer visitor, we ourselves had never seen a nest prior to 1941. We learned with regret that the nests of the Redstart, Nightingale and Snipe had all met with untimely ends, but, to-night, on visiting the "Snipe" field at Newsham it was found that the bird had quickly built a second nest and was brooding three eggs. These, we are glad to report, were subsequently safely reared.

On June 28th, following an urgent note from Miss Gibbons, we visited Holton-le-Moor, and spent most of the afternoon and early evening in the vicinity of the spot where a Red-backed Shrike had been seen on two recent occasions. It was not until the early evening that a rather harsh, tree-sparrow like call attracted our attention, and the bird was seen on a pear tree on the lawn. It seemed very nervous, and flew high into an elm, where it was seen in profile, silhouetted against the sky. Later it was again heard calling in the same locality. In the vicinity were several suitable tangles of bramble and wild rose, all of which were carefully examined, but no nest was located, nor was a second bird seen. This was our first Lincolnshire record for the Red-backed Shrike, and my own first view of the bird.

The Shrike was again seen and heard on several occasions on July 5th, but our investigations, which were carried out over a wider area, met with no result, and we had no reason to suspect that it was nesting. Incidentally, a Redstart was seen at Holton-le-Moor, the first for many years. We described its whereabouts to the Misses Gibbons, and later they too

located it. Holton-le-Moor has long been famous as one of the few haunts of the Lesser Spotted Woodpecker, and during the afternoon we successfully located one in some tall elms by means of its kestrel-like call.

Mr. May found the nest and eggs of a Reed Warbler at Newsham Lake on June 30th. Though not an annual visitor, we have seen its nest on several occasions during the past fifteen years.

On July 12th there were six Common Sandpipers feeding by one of the lakes at Benniworth Haven, possibly a brood, for when disturbed by anglers, only two took flight and circled the lake. The keeper, however, did not suspect that they had bred.

During the course of an evening visit to Scotton Common on July 21st the Grasshopper Warbler was heard singing, and although the Nightjar, which was our main quest, was not seen, local enquiries elicited the fact that there were two or three pairs in the district.

Owing to lack of opportunity for observation I have fewer notes of autumn migration than usual, and Mr. May's removal from Lincolnshire, a temporary one I hope, leaves a gap in the Limber district.

A Chiff-Chaff was singing as if it was spring, as it flitted about some hedgerows on the outskirts of Grimsby on September 5th. On September 7th I found a belated Ring Dove's nest with two eggs in a conifer at Swallow Vale. The Yellow Wagtail was noted for the last time at Old Clee on September 12th and the Spotted Flycatcher on September 13th. The first Geese, presumably Pink-footed, were seen on September 20th, a large skein of at least fifty, flying E. S.E over Holton-le-Clay. Quite an early record. During the next few weeks, and particularly just prior to the arctic conditions at the end of October, they were exceedingly plentiful

On September 28th I was delighted to see a Redstart in some hawthorn bushes on the outskirts of Grimsby. The afternoon was bright and sunny, and it was the red tail which

caught my attention as the bird flitted silently from bush to bush.

Redwings appeared in the Grimsby district on October 4th. The afternoon was bright and sunny, and they seemed quite out of place, though a light easterly breeze had been blowing all day. Lapwings were coming in from sea long before daybreak on October 6th, and the sound of their wailing cries was a pleasant change from the usual drone of enemy aircraft.

I saw and heard a Brambling at Old Clee on October 13th. It was flying across open country shortly after sunrise. House Martins were last seen on October 15th. On that day there were scores of them at Old Clee, but on the following day not a single one remained. The first immigrant Goldcrests appeared on October 16th, and every bush and hedge resounded with their thin, piping voices. Swallows were seen for the last time at Old Clee on October 19th.

The first Fieldfares appeared on October 25th, which is the average date over a long series of years.

So far, this autumn, there has been little to report from Newsham Lake on the few occasions when I have visited it. As a result perhaps of the early summer drought the water is still low, and it will need hours of heavy rain before any diving ducks are attracted. Last Sunday, November 9th, I was interested to see a large gathering of Dabchicks on the lake. The margins were frozen, and the birds, which were bobbing about like corks, were confined to one small area. At one time I counted twenty-four of them, but there were probably several more, for they were constantly diving for food.

In conclusion, I would mention that Mr. L. Ottoway, who recently joined the L. N. U., and showed signs of being a great asset to the ornithological section, has joined the R. A. F. I sincerely trust that he and Mr. May, and other members who are no longer with us, will soon be once again taking an active part in the work of the Union.

JUNIOR MEMBERSHIP.

In order to stimulate interest among younger naturalists, it was decided to give opportunity for juniors under 18 years of age to enroll at a reduced annual subscription of 2/6. Junior members will enjoy the full privileges of membership but will not be allowed to vote at the Annual General Meeting. It is hoped that a strong junior section will be formed and members are invited to put the Hon. Secretary in touch with potential Junior Members.

ANNUAL SUBSCRIPTIONS.

A saving in paper and expense would be effected if members would pay their subscriptions in advance of notification. Subscriptions become due on January 1st and should be paid to the Hon. Treasurer, City and County Museum, Lincoln. Members whose subscriptions are in arrears are asked to remit the amount immediately as it will be necessary, as a matter of economy, to delete members whose subscriptions may be deemed to have lapsed. Members serving with H.M. Forces pay no subscription for the duration of the War. The Hon. Secretary would appreciate notification of any such members and would be pleased to keep them in touch with the Union's activities if supplied with their addresses.

RECORDS.

A further appeal is made for concentrated work on a limited area. Restrictions in travel make wider studies impossible but much can be done by systemmatic collection and record near to home. Sectional Officers will be pleased to

give every assistance in identifications. It is particularly hoped that some members will collect specimens in the less known orders of insects, e.g. Orthoptera (Grasshoppers and Crickets), Odonata (Dragonflies), Hemiptera (Plant Bugs, Aphides, etc), Trichoptera (Caddis flies), etc. The Hon. Secretary will be pleased to give advice about the collection, packing and transport of specimens.

REVIEWS.

From time to time the Freshwater Biological Association has sent copies of its excellent publications for review in the TRANSACTIONS. The small amount of recent authoritative material on freshwater biology available in easily-obtained publications, makes these booklets extremely valuable. The keys are concise and are accompanied by clear diagrams. It is hoped that members will secure these publications and that they will be the means of stimulating work in freshwater biology in the County. All publications may be obtained from the Director, Wray Castle, Ambleside, Westmorland, price 1/7 each, post free.

1. Macan, T. T. A key to the British species of Corixidae.

2. Hynes, H. B. N. A key to the British species of Plecoptera (Stoneflies).

3. Hartley, P. H. T. The food of coarse fish.

4. Macan, T. T. A key to the British water bugs (Hemiptera-Heteroptera excluding Corixidae).

5. Scourfield, D. J. *and* Harding, J. P. A key to the British species of Cladocera.

6. Macan, T. T. and others. The production of freshwater fish for food.

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